CLAIMS

1. A plug for insertion into an endodontically prepared root canal of a tooth, comprising:

an elongated body comprised of a biologically implantable, resilient material having a distal end and a proximal end and having a length to allow the distal end to be positioned adjacent to an apical portion of the tooth when the body is inserted in the root canal of the tooth, the body being further comprised of a material that is optically transmissive.

2. The plug according to claim 1 wherein the optically transmissive material further comprises an optically transparent material.

3. The plug according to claim 1 wherein the optically transmissive material further comprises an optically translucent material.

4. The plug according to claim 1 wherein the elongated body further comprises an elongated body that tapers from the proximal end to the distal end.

5. The plug according to claim 1 wherein the material further comprises a material selected from the group consisting of silicones, polyethylenes, polyurethanes, polytetraflouroethylenes, polymethylmethacrylates (PMMA) and polytetraflourethyenes (PTFE).

6. The plug according to claim 1 wherein the material is further comprised of a radio-opacifier.

7. The plug according to claim 6 wherein the radio-opacifier is comprised of a barium compound.

8. The plug according to claim 6 wherein the radio-opacifier is comprised of a bismuth compound.

9. The plug according to claim 1 wherein the material is further comprised of a phosphorescent compound.

10. The plug according to claim 9 wherein the phosphorescent compound further comprises anhydrous zinc sulfide.

11. The plug according to claim 9 wherein the phosphorescent compound further comprises calcium tungstate.

12. The plug according to claim 1 wherein the material is further comprised of one component of a two component bonding system.

13. The plug according to claim 1 wherein the material is further comprised of a radioisotope having a relatively short half-life.

14. A carrier for root canal obturation in an endodontically prepared tooth, comprising:

an elongated plug portion comprised of a biologically implantable, resilient material having a distal end and a proximal end and having a length to allow the distal end to be positioned adjacent to an apical portion of the tooth when the plug portion is inserted in the root canal of the tooth, the plug portion being further comprised of a material that is optically transmissive; and

an elongated support portion having a first end coupled to the proximal end of the plug portion and an opposing second end.

15. The carrier according to claim 14 wherein the elongated plug portion is further comprised of an optically transparent material.

16. The carrier according to claim 14 wherein the elongated plug portion is further comprised of an optically translucent material.

17. The carrier according to claim 14 wherein the elongated plug portion further comprises an elongated plug portion that tapers from the proximal end to the distal end.

18. The carrier according to claim 14 wherein the elongated plug portion further comprises a radio-opacifier.

19. The carrier according to claim 14 wherein the elongated plug portion further comprises a phosphorescent compound.

20. The carrier according to claim 14 wherein the elongated plug portion further comprises one component of a two component bonding system.

21. The carrier according to claim 14 wherein the elongated plug portion further comprises a radioisotope having a relatively short half-life.

22. The carrier according to claim 14 wherein the support portion further includes a handle positioned adjacent to the second end.

23. The carrier of claim 14, further comprising:

an optical fiber embedded in the plug portion that extends at least a partially along the length of the plug portion, the fiber further extending outwardly from the proximal end of the plug portion.

24. The carrier according to claim 23 wherein the support portion further includes an interior passage that extends from the first end to the second end, and the optical fiber extends along the interior passage.

25. A method for obturating a root canal passage in a tooth, comprising:
applying a light-curing adhesive to the root canal passage;
inserting an optically transmissive plug into the root canal passage; and
exposing a portion of the plug to a light source to cure the adhesive.

26. The method according to claim 25 wherein inserting an optically transmissive plug into the root canal passage further comprises heating the plug to soften an exterior surface layer of the plug.

27. The method according to claim 25 wherein applying a light-curing adhesive to the root canal passage further comprises applying a light-curing adhesive having a viscosity in the range of at least about 0.5 cP to at least about 1.5 cP.

28. The method according to claim 25 wherein exposing a portion of the plug to a light source further comprises exposing a portion of the plug to a source of light at a selected wavelength.

29. The method according to claim 25 wherein exposing a portion of the plug to a source of light is further comprised of exposing a portion of the plug to light through an optical fiber that is optically coupled to the light source.

30. The method according to claim 25 wherein inserting an optically transmissive plug into the root canal passage further comprises:

manipulating a carrier having an optically transmissive plug portion positioned on a support portion to place the plug portion in proximity to the root canal passage; and

inserting the plug portion into the root canal passage.

31. The method according to claim 30, further comprising severing the support portion from the plug portion.

32. A method for obturating a root canal passage in a tooth, comprising:

applying an adhesive to the root canal passage;

inserting an optically transmissive plug into the root canal passage; and

curing the adhesive.

33. The method according to claim 32 wherein inserting an optically transmissive plug into the root canal passage further comprises exposing an optically transmissive plug comprised of a phosphorescent material to a source of light to induce photoluminescence; and curing the adhesive further comprises exposing the adhesive to the photoluminescence to cure the adhesive.

34. The method according to claim 32 wherein applying an adhesive to the root canal passage is further comprised of applying a first component of a two-part bonding system to the root canal passage; and inserting an optically transmissive plug into the root canal passage further comprises inserting a plug into the root canal passage that is formed from a second component of a two-part bonding system.

35. The method according to claim 32 wherein applying an adhesive to the root canal passage further comprises applying a light-curing adhesive to the root canal passage.

36. The method according to claim 35 wherein applying a light-curing adhesive further comprises applying a light-curing adhesive having a viscosity in the range of at least about 0.5 cP to at least about 1.5 cP.

37. A method for obturating a root canal passage in a tooth, comprising:

fusing an optically transmissive material to form a semi-liquid mass of the material;

applying a light-curing adhesive to the root canal passage;

injecting the semi-liquid mass into the root canal passage to form an obturating body within the root canal; and

exposing a portion of the obturating body to a light source to cure the adhesive.

38. The method according to claim 37 wherein applying a light-curing adhesive to the root canal passage further comprises applying a light-curing adhesive having a viscosity in the range of at least about 0.5 cP to at least about 1.5 cP.

39. The method according to claim 37 wherein exposing a portion of the obturating body to a light source further comprises exposing a portion of the body to a source of light at a selected wavelength.

40. The method according to claim 39 wherein exposing a portion of the obturating body to a source of light is further comprised of exposing a portion of the body to light through an optical fiber that is optically coupled to the light source.

41. The method according to claim 37 wherein fusing an optically transmissive material includes fusing an optically transmissive material in a "gutta percha gun."